JUNE 1969
Vol. 34, No. 11

soil conservation

DEVOTED TO THE WISE USE OF LAND AND WATER RESOURCES

CONSERVATION IN THE GREAT PLAINS

SOIL CONSERVATION SERVICE

U. S. DEPARTMENT OF AGRICULTURE

June 1969 Vol. 34 No. 11

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COVER: A buffalo bull on the Niobrara Wildlife Refuge in Nebraska. The refuge is a cooperator with the Cherry County Soil and Water Conservation District. SCS helped make the range conservation plan.

Arena . . .

We look this month at one of the prime arenas of conservation effort in America—the Great Plains.

Out of the distress of land and people in that high, dry, windy area a generation ago came one of the compelling arguments for a national conservation program.

In its blowing fields and parched pastures were devised and tested farming and ranching practices that would still the sand and husband the moisture to make a tenable home for crops, livestock, and people.

In 1956 the Congress authorized a special program to effectuate those practices. We asked our fieldmen, "How well has it worked?"

Response: Out of the flood of case histories, summaries, and testimony we offer an appraisal that lays no claim to being detached or objective. It bespeaks the involvement of veterans of that conservation arena who see the success of their efforts.

(Bill Vaught (p. 243) grew up in Wyoming and writes from a full conservation career in the Plains, aided by Doc (T. A.) Jenkins who learned his newspapering in Oklahoma and Texas.

The staff-written article on women in the Plains (p. 250) is by Janice Curtis. Although stationed now in bluegrass-green Kentucky, she came by her sympathy for dust-harried housewives as a girl and student in Nebraska and an SCS writer at Lincoln.

The selection of case-history vignettes (p. 246) speak eloquently for the fieldmen who reported them.

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SOIL CONSERVATION is the official magazine of the Soil Conservation Service, published monthly by direction of the Secretary of Agriculture as administrative information required for proper transaction of the public business. Use of funds for printing this publication approved by the Director of the Bureau of the Budget July 17, 1968.

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Prepared in the Division of Information, Soil Conservation Service, U. S. Department of Agriculture, Washington, D. C. 20250

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Subscription: $2.50 per year, $3.25 foreign. Single copy 20 cents. Discount of 25 percent on orders of 100 or more sent to same address. Order direct from Superintendent of Documents, Government Printing Office, Washington, D. C. 20402.

A decade of action...

Great Plains Conservation Program

... focused on a region

By William L. Vaught
Resource Development Division, SCS, Washington, D.C.

Historians and scientists alike recognize the Great Plains as a region unto itself.

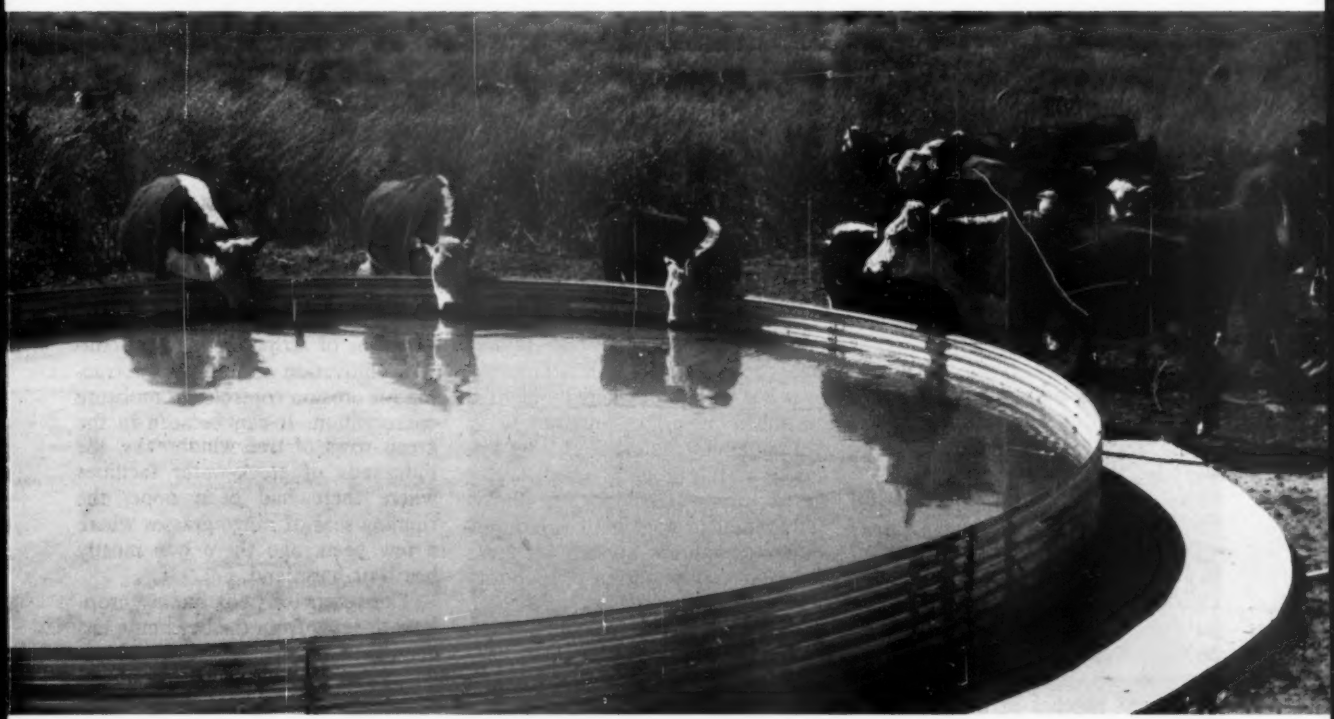
Drought is a continuing threat in parts of 10 states bounded on the west by the Rockies and on the east by the imaginary line where rainfall averages 20 inches a year.

Duststorms and economic distress in this region in the 1930's gave impetus to launching a national soil conservation program that now blankets the Nation with active conservation districts.

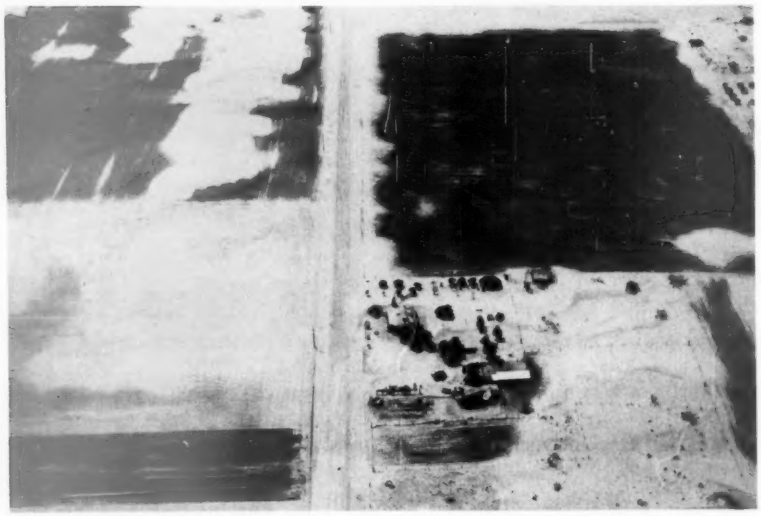
But the ordinary scope and rate of land treatment by private action, even with the encouragement of district leadership, did not cope adequately with the climatic and physical hazards of Plains agriculture.

It was in the course of the long drought of the 1950's that agricultural leaders of the Great Plains proposed to Congress a special program to bring soil and water conservation principles to bear in a coordinated and concerted fashion on the peculiar problems of the region.

The Great Plains Conservation Program Act of 1956 embodied the recommendations of conservation districts, Land Grant colleges, experiment stations, and other indigenous organizations and agencies.



New livestock watering facilities and good range management add stability to a ranch operation.



Farmstead and fields in the Plains without benefit of conservation practices (left) are exposed to winds and blowing soil. Where adjoining farms use windbreaks and conservation cropping systems (below), the people and the land are protected.

Use of the land within its capabilities would be basic. Conservation use and management of plant and water resources would give stability to agriculture and hence to the industry and economy of Plains communities.

The law authorized $150 million for a 15-year program and directed the Soil Conservation Service to give priority help to landowners wanting to participate. Most of the federal funds would be used for cost-sharing to enable farmers and ranchers to do their conservation work more rapidly than their own resources would permit. The law stipulated that a participating landowner would develop a satisfactory conservation farm or ranch plan, work out a timetable for applying it, and enter into an agreement with the Secretary of Agriculture.

A decade in review

Now that the 1971 expiration date of the original authorization is drawing near, it is proper to take stock of more than a decade of operations of the program.

As of January 1, 1969, the number of landowners taking part in the Great Plains Conservation Program has passed the 32,000 mark. Their holdings totaled 59 million acres, roughly one-sixth of the land in farms and ranches in the 423 participating counties within the authorized program boundaries. One out of every nine landowners in the area has taken part in the program.

Preliminary returns of the updated Inventory of Soil and Water Conservation Needs for the Plains States indicate that modern conservation techniques applied by these and other conservation cooperators are proving equal to the task.

The program's direct contribution can be measured in acreages of hazardous cropland now covered with enduring and profitable grass, in expanses of stripcropping and contour cultivation and miles of terracing for erosion control and moisture conservation. It can be seen in the green rows of tree windbreaks, the thousands of stock-water facilities where there had been none, the rippling seas of range grasses where a few years ago there was mostly brush or bare land.

The return of poor quality cropland to grass from the beginning has been one of the program's objectives. The new Conservation Needs Inventory, with figures drawn from

the 423-county area, shows that the amount of unsuitable cropland still in cultivation has been reduced to 5.5 million acres from the 1958 figure of more than 11 million acres. Well over 2 million acres of this low-grade cropland has been covered with productive grass.

Cropland under contract for conversion to grass but yet to be seeded totals 438,000 acres. It is estimated that by January 1972, the area needing such treatment will have been reduced to about 4.5 million acres.

Most of the unsuitable cropland, some 3.5 million acres, according to the inventory, has suffered severe erosion damage. The soils of an additional 800,000 acres are considered too unstable to remain in cropland use.

Restoring rangeland

Damaged rangelands also rank high in priority for attention in the Great Plains Program. The Conservation Needs Inventory shows 12.6 million acres out of 214 million acres in range and pasture in the area needs conservation treatment by reestablishment of grass cover. About half of this acreage has been seriously damaged by erosion

By 1972 the range acreage needing conservation treatment will have been reduced to 11.8 million acres, according to the estimates.

For conservation work done and still under contract with the Secretary of Agriculture, the Federal Government has paid out, or obligated, $113,73[illegible],000 in cost-share funds. The per-farm average year by year has ranged from $3,471 to $3,842, the larger figure the result of large units entered in the program's early years.

The number of landowners who have completed their work and terminated their agreements is nearing 15,000. Their farms and ranches, which have been fitted with needed soil and water conservation measures to make them erosion-resistant and economically stable, add up to around 24 million acres.

What happens to a farm or ranch when the conservation job is done? In Texas, Assistant State Conservationist James D. Abbott, who directs the Great Plains Conservation Program in that state's 98 participating counties, conducted a survey to see.

Progress at a glance

Great Plains Conservation Program to December 31, 1968

Number of contracts	32,352
Area covered by plans, acres	58,964,305
Average unit	1,822
Permanent cover established, acres	1,446,662
Rangeland reseeded, acres	1,099,405
Windbreaks, acres	24,559
Terracing, miles	50,559
Contour stripcropping, acres	123,596
Dams for erosion control	17,292
Ponds for use of vegetative cover	17,510
Wells for livestock water	12,417
Pipelines for livestock water, miles	3,154
Control of competitive shrubs, acres	3,731,304
Permanent fencing, miles	8,253
Reorganizing irrigation systems, acres	3,031

Completed contracts

Of 4,050 farms and ranches visited, the owners of more than nine of every 10 were keeping their conservation work at a level satisfactory by conservation standards. Actually a fourth of the number had invested in further improvements.

In a few cases—and in most of these instances the farm or ranch had been sold to owners not familiar with the hazards of Plains agriculture—the work was not being properly maintained.

Looking back over their experience in the program, landowners had these observations to report:

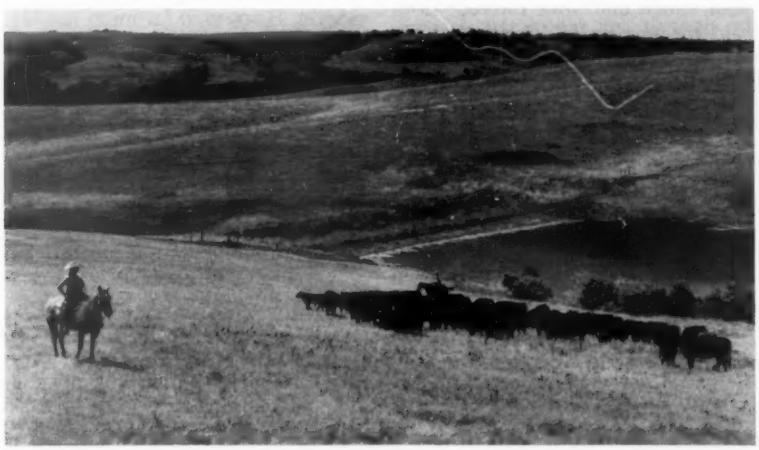
They had gained in the process a clear understanding of the needs of their land.

Their conservation work had given economic stability to their enterprises.

The opportunity to do an entire conservation job in a short period had led many to enter the program.

And some of the smaller operators said the added economic stability in their enterprises had enabled them to stay on their farms.

The Texas survey indicated that work accomplished under the program in the 98 counties in the 11



Good grazing management insures livestock feed and soil protection in the naturally unstable Plains environment.

years of activity amounts to from 10 to 15 percent of the conservation work needed in the area. Achievements would have been greater had funds been enough to meet the requests of all applicants.

Community benefits

Benefits to entire communities as a result of the program are not easy to measure, but they are nonetheless real. New economic stability of landowners and operators is reflected in a more solid foundation under the total economy of an area. Cash reserves, as useful a device in a Plains emergency as silos filled with feed, are on deposit. Along with the feeling of general security that appears to be growing in Plains communities is the general pride in the appearance of the country.

A North Dakota county commissioner, Jake Swenson of near Bismark, himself a participant in the Great Plains Conservation Program, spoke of benefits enjoyed by his community as well as the increased efficiency of his own farming.

"It has meant less dust in the air and clearer water in ponds and streams," he said. "It has helped the wildlife in our area. It has made our surroundings much more attractive."

In Colorado, Rancher Russell D. Lohr proudly showed his new Great Plains contract to the banker who had suggested he look into the program.

"Every practice you add builds your ranch and your future," Lohr said the banker told him. And the rancher added: "Also we are going to have a better place to live."

The President's special committee on the Great Plains, reporting its findings in 1936, pointed out: "The success of a longtime plan for essential readjustments in the Great Plains economy in the final analysis will depend on local action even more than on federal or state action . . . primarily the responsibility rests on the people in the Great Plains states."

This appears to be the way it is working out. ♦

In the Great Plains...

Conservation in action

The success of the Great Plains Conservation Program can be measured not so much in its effect on resources as on the lives of people.

The rancher with no water and too little grass, the farmer almost ready to move to town for a wage-paying job, the landowner group with not quite enough land for each to make ends meet, the man troubled by the sight of his land blowing and washing away—these are the people who looked to the new program for help and got it.

There were sure ways to solve the problems, ways thoroughly tested in drought and downpour; but solving the problems, it has been shown, requires getting needed conservation measures applied for all the resources of the Plains rather than for a part of them.

Here are glimpses of the way the Great Plains Conservation Program, offering on-the-spot technical help, cost-sharing for much of the job, and systematic scheduling of steps toward a complete resource conservation plan, has contributed to the improvement of living throughout the 423-county area.

New Mexico

Credit and conservation plan give new assurance

To Amadeo Quintana the many problems he faced seemed too much. He was at the end of his riata. The only solution appeared to be to give up his 838-acre place and go to the city to find a job.

There was little return from the part of his ranch that had been in cultivation. The grassland was infested with brush and producing poorly. He needed far more fencing. He was hauling water 4 miles to some of his grazing areas.

Improvements? Where could Quintana find the money?

A loan from the Farmers Home Administration solved a part of his problem. A complete conservation ranch plan he worked out with SCS conservationists and included in a Great Plains contract brought further reassurance.

The plan is half installed now, and Quintana is encouraged. Livestock water, abundant and dependable, is where it was needed. Brush is under control. Old fields, seeded to a nurse cover crop, are ready for planting to good range grasses.

Quintana already is reaping results from a unit now approaching economic stability. He no longer thinks of the job in town.—JOHN WARNER, *district conservationist, SCS, Roswell, formerly Mountainair, N. Mex.*

Wyoming

Water spreaders grow more hay while they heal gullies

Oscar Middleton's story is like that of many Great Plains ranchers who year by year saw what rainfall they got run off rapidly, carrying soil and lengthening gullies.

By working through the Great Plains Conservation Program, Middleton, near Douglas, Wyo., stopped erosion and, with a system of dikes, guided the runoff over the land in an orderly manner, giving it a chance to produce forage for his stock. He is cutting hay from some of the land, more than 100 tons where 30 tons was a good crop before. The gullies are filling in.

"I didn't have to wait a lifetime

(Photo courtesy Colorado Game, Fish, and Parks Division).

to get my money back either," he said. "And see those trees around the meadows and the buildings." The slowed-down runoff, giving needed moisture to the soil, has made the trees possible, he explained.—MYRON J. WAKKURI, *range conservationist, SCS, Douglas, Wyo.*

Colorado

FHA loan, Plains contract aid association

The Chimney Canyon Grazing Association in northeastern Colorado grew out of a typical need in the Great Plains—small landowners urgently needing more grassland for a sound, family-supporting operation.

A Farmers Home Administration loan helped the 42 members put the unit together from three former ranches. The association called on the Soil Conservation Service specialists assigned to the Peetz Soil Conservation District for help in developing a Great Plains Conservation Program plan.

A range site inventory showed the need for sound grass management. Much of the cover was good, but there were poor condition areas where grazing stock had been concentrated. Well-placed water, too, went into the plan.

Cross fencing for proper management was high in priority. The members agreed that bottom fence strands would be at least 15 inches above the ground. Antelope, you see, go under fences, not over as deer do. And wildlife, as a resource of the land, is highly regarded by landowners like those in the Chimney Canyon Association.—TOM EAMAN, *range conservationist, SCS, Denver, Colo.*

A gullied area in the Upper Elm-Red Soil Conservation District in Texas was shaped and sodded. The second picture was taken 9 months after the first.

Texas

Restoration of gullied fields builds land values

Alvin Roberts sells real estate in the Upper Elm-Red Soil and Water Conservation District in Texas, particularly in Montague County which came into the Great Plains Conservation Program in 1966.

Much of the county is in the sandy, hard-to-manage West Cross Timbers area, a section known for yawning gullies.

"Before we had this program, it was hard for our SCS people and our district supervisors to convince owners that it was practical to put abandoned fields into grassland. A few people tried it and showed it would work. Now everybody wants to work out a Great Plains Conservation Program plan, but we always seem to be out of money."

Roberts had something else to report: "I've seen people get a Great Plains Program contract because they wanted to fix a gullied area. But their contract would call for other things like rotation grazing, proper stocking, or crop residue management. They learned that these management practices, which gave them no cost-share help, were

Improved grass and water put South Dakota livestock operation on a sound basis.

worth more to them than the work they wanted in the first place. And you know," he added, "it helps our county's image every time somebody cures one of those ugly spots."—TOMMIE HAYES, *district conservationist, SCS, Bowie, Tex.*

South Dakota

A brighter family future and a stronger community

The years 1959 through 1962 were dry ones in the neighborhood of Vale, S. Dak., and Kenneth B. Johnson was gravely concerned.

Only the deep pond had water at all, but the mud was so thick the cattle couldn't reach it. No grass grew. Johnson was having to buy feed and haul water from 7 miles away. The future—if there could be said to be a future for the family—was looking dimmer every week.

Johnson asked the supervisors of the Elk Creek Conservation District for help with conservation work he needed. He worked out a plan with SCS conservationists helping and signed a contract under the Great Plains Conservation Program.

The seeding of cropland to hay and pasture, the drilling of a well with pipelines to the water-short pastures, dikes to allow more efficient use of rainfall on the grassland —these and more were steps in the Johnson conservation plan.

The Elk Creek District board now points to the Johnson ranch as one of many contributing to the stronger economy of the community.

The family's outlook is brighter. The two boys are in South Dakota State University, and Susan is in high school in Sturgis. Mrs. Johnson is busy with community activities.

Johnson? He became a member of the soil conservation district board, which he now serves as chairman.—G. HARLAND MEANS, *district conservationist, SCS, Sturgis, S. Dak.*

Kansas

Systematic seeding program makes progress with grass

Not every year in southwestern Kansas can you expect grass seedings to be successful.

Since giving up on wheat farming in the 1950's, Charles and George Light of near Liberal in the Seward County Soil Conservation District had been planting grass on cropland and on their depleted range with only occasional success. The sagebrush, weeds, and poor grass species still appeared to have the upper hand.

A complete conservation ranch plan under the Great Plains Conservation Program seemed to give the Light brothers confidence. They started their systematic grass-seeding program in 1960 by furrow seeding 649 acres to a sandyland mix of bluestems, gramas, indiangrass, switchgrass, and sand lovegrass. They kept up the grass seedings in following years, with marked success, and built fencing for conservation management of their improving crop of grass.

Their 3,489 acres of rangeland now supports 200 beef cows and goes on improving. The ugly blowouts are hard to find, and sagebrush and weeds are disappearing. The brothers say that the opportunity to do their conservation work with timely assistance from SCS specialists, with cost-sharing and systematic timing of work, came at—for them—a good time.—RAYMOND S. CLARK, *district conservationist, SCS, Liberal, Kans.*

Texas

Landowners win gratitude of city and county

Ten landowners, using help from the Great Plains Conservation Program to do their conservation work, have won an expression of gratitude from a city, the county commissioners, the highway department, an oil company, a fertilizer firm, and a utility company. The airport manager said thank you, too.

The city: Dumas, Tex. The county: Moore.

One of the sudden downpours characteristic of that area of the Texas High Plains used to mean a sure flood in the downtown and some of the surrounding sections.

The conservation plans serving the landowners could also help solve the associated problems in town. A flood-retarding dam on the ranch of Mrs. A. B. Burnett was one of the corrective steps. Miles of waterways, to carry the water safely to natural stream courses, were finished 2 years ago on the Burnett, Edward Stallwitz, George Ricketts, Alma Neiman, Ronnie Wells, Arthur Stokes, and Hershell Berry places, and on adjoining city and county land.—FRED SQUYRES, *district conservationist, SCS, Dumas, Tex.*

Ranch returns show success of Great Plains Program

By H. L. Leithead and J. L. Richmond
Regional range conservationist and area conservationist, SCS, Fort Worth and San Angelo, Tex.

Is the Great Plains Conservation Program meeting its intended objectives? The 4,478-acre ranch of Bill Tullos, Mertzon, Tex., offers an answer.

Ten years before the launching of the Great Plains Conservation Program, a range conservationist studied the resources of the ranch and made his report. All the rangeland was in poor condition—too many grazing animals and almost no usable grass. What grass there was was of low quality.

The severe drought of the 1950's settled the matter for a time—all the livestock had to be sold, the land lay idle.

In 1957 improving moisture produced enough forage for 5,200 lambs for 6 months in winter and spring. But the forage was low in quality, and weight gains were disappointing.

The comeback road

The owner realized that he must either sell out or improve what he had. As it was, the ranch could not produce a family living. Improving the ranch would take money—credit. The owner could not finance it by himself.

The new Great Plains Conservation Program offered a possibility. The owner, already a cooperator with the middle Concho Soil and Water Conservation District, decided to participate and signed an agreement covering a 10-year plan.

Control of brush on 3,600 acres was essential before improvement of grass could be expected. After that, a full season of deferred use must follow.

Range seeding would be needed on 1,959 acres, which included an old field and a pasture where machinery was used to root up the tree growth.

Grasses seeded were the strong, beef-building native species that covered the area before settlement days. Two seasons of rest followed to allow the seedlings to gain vigor and size.

For improved range management —fencing, 1,352 rods of it.

Next, water for the stock—a well and two ponds.

Coupled with these physical improvements, of course, was a conservation grazing system that included proper rates of stocking and rotation-deferred grazing.

Marked improvement

In 1967 another range evaluation on the ranch showed marked improvement: 1,130 acres in good and excellent condition; the rest, 3,148 acres, in fair to excellent condition. This was in spite of below-normal growing conditions 6 years out of the 10.

The evaluation rated the carrying capacity of the ranch at 257 animal units—an animal unit comprising a mother cow and calf or five sheep.

A signal improvement occurred in the performance of individual animals. Wether lambs bought in the fall of 1961 and sold in the spring of 1962 gained on the average only 4 pounds. In the winter of 1964-65 the same quality of lambs gained 13 pounds per head. In the 1966-67 winter season, lambs gained 23 pounds on the average.

The wool and mohair showed improvement also: 16,549 pounds in 1967 against 8,950 pounds from virtually the same number of animals 5 years earlier.

Costs and returns

In a cost-return analysis for the operation for the years 1961, 1965, and 1967, economists tallied the costs of applying the needed treatment under the Great Plains Conservation Program, amortized over 10 years at 6 percent to arrive at annual costs. Actual expenses for feed, taxes, and maintenance of improvements were taken from ranch records. Six percent interest was charged against the value of the livestock.

Here were the returns from land and management for 3 years:

	1961 Dollars	1965 Dollars	1967 Dollars
Income	14,604	22,652	27,675
Expense	14,718	16,401	18,949
Net	(loss 114)	6,251	8,726

The range specialists pointed out that the increase in net returns came more from greater efficiency and a better performance per individual animal than from stocking rates.

The rancher was pleased with the results of his investment. He decided to keep the ranch, sure that under conservation management his range would continue to improve. ♦

Livestock production

	1962	1965	1967
Animal units grazed			
Cattle	0	40	47
Sheep	172	145	166
Goats	38	39	40
Total animal units	210	224	253
Meat sold			
Calves, pounds	0	15,162	11,840
Lambs, pounds	14,005	28,400	23,480
Yearlings (lambs), pounds	28,425	29,754	42,717
Total, pounds	42,430	73,316	78,037
Wool and mohair sold			
Wool, pounds	7,400	9,246	14,549
Mohair, pounds	1,550	1,680	2,000
Total, pounds	8,950	10,926	16,549

Some remember the dust and hardship...

Great Plains women face new prospect

Some have forgotten the wind and the dust of the 1930's in the Great Plains. Some have forgotten the courage it took to stay and do the grueling work of putting cover back on the runaway land.

Some have forgotten—but not the women who hung wet sheets over the windows and doors to keep out the suffocating dust.

Not the housewives who scooped the dirt out of their homes with shovels.

Not the wives who watched their husbands struggle year after dry year to grow enough food to keep their families alive.

Not the mothers who stood by helplessly and watched their children die of "black pneumonia" caused by the dust clogged air.

These are the women who today know, as well as their husbands, the importance of conservation on the Great Plains.

Conservation which, under the Great Plains Conservation Program, has given the ranchers and farmers of the region a practical and profitable way to prevent a recurrence of the Dirty Thirties.

A total program

It is a total program . . .

. . . to include cost-sharing, credit, and technical assistance in soil and water conservation.

. . . to keep the dust on the fields —out of their homes and their children's lungs.

. . . to make life easier for them and their families.

. . . to give the women time to be women!

These are the women who today, because of this program, have time for outside work, instructive clubs, productive hobbies. Modern conservation farming practices and household conveniences have turned these women into the Great Plains counterparts of 5th Avenue.

By the time they are grandmothers, these women of the Great Plains no longer are wrinkled and old beyond their years.

One such young grandmother is Mrs. Dwight Finney of Simpson, Kans., mother of five and grandmother of 12. Although Dwight signed a Great Plains contract only a few months ago, he has been farming his 2,380 acres the conservation way for many years. Their farm-ranch operation already has six ponds, 2 miles of terraces, 8 acres of waterways, and 60 acres reseeded to native grasses. Future plans call for an additional 55,000 feet of terraces.

Her little factory

Charlotte still helps in the fields during harvest, but now she also has time to pursue her own interest in ceramics. Her "little factory," begun 3 years ago in the basement, does a $500 annual business in ashtrays, bowls, and figurines for friends, relatives, and grandchildren.

"I can hardly get anything else done," Charlotte said. "All I want to do is ceramics."

But, as is so characteristic of the Great Plains women, she does get other things done. She helps operate the citizen's band radio used as a fire warning system in the community. She has served as both president and vice president of the Extension Homemaker's unit in Simpson. She won bowling trophies during a tournament 4 years ago.

"I'm really not that good," she said about her bowling. "We didn't have hired help that year, so I was working in the fields throwing hay bales around. We played nine straight games in that tourney. I won because I outlasted everyone else."

A husband-wife joint grain and hog operation keeps Mrs. Dixie Siler (above) busy feeding his grains to her hogs. Mrs. Jeanette Matousek (right) helps with silage harvest by driving the truck when needed.

Outlast and courage

And, perhaps, outlast is a word that describes many of the Great Plains farm and ranch wives. Outlast and courage!

Courage to outlast the dust. Courage to outlast the doubts and fears and to build again.

Mrs. Jeanette Matousek and her husband, Glen, of Cuba, Kans., have this kind of courage. Glen and Jeanette both remember the big blows of the 1930's. That's why they hesitated to buy high-priced farmland. Until 5 years ago they had been doing a lot of good conservation work—but on other people's land. Now they are applying conservation on their own 620 acres.

It was the Great Plains Conservation Program that finally convinced the Matouseks that land was a good investment. They figured that conservation practices give the land resistance to drought and the other hazards of the 30's, and they were experienced in applying them. The new program offered them the opportunity to do the job quickly and with a sharing of the cost burden.

Today, one of their prize possessions is the farm pond which, among other things, is used for fishing by their three children.

Head bookkeeper for the John Bartholomew farming enterprise is wife Tessie. They farm 773 acres in Jewell County, Kans., where like most central Kansas farmers, wheat is their main crop. Theirs is a Banker's Conservation Award Farm for 1966, honored by the Kansas Banker's Association.

On all his land

John not only practices conservation on his own land but also on the acres he rents. In fact, he does not rent land unless the owner agrees to sign a Great Plains contract to have conservation work done.

Tessie is one of the women who remembers when times were "not so good."

"We didn't have running water until we moved here 10 years ago," she said. "We didn't have electricity until Nancy started to kindergarten."

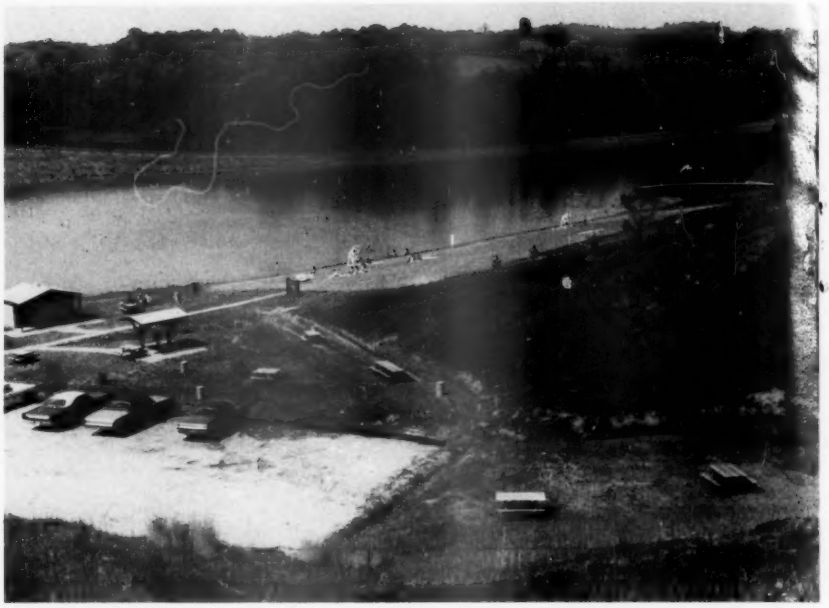
But, although these women now have time for clubs, hobbies, neighborhood get-togethers, the PTA, or work as 4-H leaders, they still lend a great deal to the farming and ranching operations of their husbands. Many drive the wheat or silage truck and run errands during harvest, in addition to doing the farmyard chores. Many also have livestock enterprises of their own.

Mrs. Dixie Siler and husband Carmen farm 1,200 acres near Minneapolis, Kans. Carmen is a grain farmer. He entered a Great Plains contract because "I knew it would save my soil, and that's what I wanted." Dixie, with the help of their four daughters, is the hog raiser in this joint grain and hog operation. She feeds *his* grain to *her* hogs.

Dixie markets around 500 pigs a year, either as top hogs in winter or feeder pigs in the summer. She has 32 sows, most of them Hampshires and has selected 35 gilts as replacements or additions for her hog "family."

Her kind of enthusiasm, together with the willingness to work hard and try new things, makes it easy to see why the life and the women of the Plains have blossomed from the dust of yesterday into the beauty of today and tomorrow. ♦

From floods to recreation



Wolf Run Lake, part of a system giving the valley protection from floods, is the center of a new state park.

Would you trade a flood-plagued valley for a beautiful recreation area? People near Caldwell, in southeastern Ohio, did.

Steep hills and narrow valleys put the squeeze on tributaries of the 106-square-mile watershed drained by the West Fork of Duck Creek. Water crowding through silt-clogged channels swelled across several thousand acres in the 24-mile-long valley. More than once a year, highways, businesses, industries and railroads, and rich farmland acres were inundated. In eight valley villages 75 percent of the people were directly affected. An average of $79,000 in flood damages was being siphoned out of the valley's economy each year.

In 2 years' effort, the flooded valley was transformed into a camper's paradise. With the completion of flood-abating Wolf Run Lake, Ohio

Before the watershed protection project, Duck Creek and its tributaries overran their banks several times a year. An extensive camping area (below) and bathing beaches (right) have been established around one of the lakes.

Shady campsites appeal to family groups at Wolf Run park.

developed one of the Midwest's most modern state parks.

The park contains 1,150 acres of scenic hill country overlooking the 220-acre lake. The lake alone is a $500,000 multipurpose project preventing floods, supplying water and recreation.

The 174-site camping area was constructed as part of a Public Law 566 small watershed project with federal cost-sharing. The Ohio state government administered the contract and gave the project's multiple benefits a big boost by contributing $328,000 for the camping area.

The new camping area is exquisite in rustic beauty. For people who like the camping atmosphere but do not care to "rough it all the way," a few of the comforts of home are provided. In addition to the trailer and tent sites, there are two modern wash-houses equipped with hot and cold showers and laundry facilities, a modern sewage treatment plant, modern toilet facilities, central trailer dumping stations, liquid waste drains, and drinking fountains.

Instant popularity indicates the recreational facility will offer outdoor summer activities to more than 250,000 people annually.

The 220-acre impoundment furnishes almost everything to be desired in fishing, boating, and swimming. The public beach has ample parking space and modern change booths. Lifeguards are on duty during normal swimming hours.

A concrete boat landing ramp is available for boat enthusiasts.

The development of Wolf Run Lake and recreation area exemplifies local, state, and federal cooperation. The Ohio Department of Natural Resources, Muskingum Watershed Conservancy District, soil and water conservation disticts, Noble County commissioners, and the villages of Caldwell and Belle Valley, with the assistance of the Soil Conservation Service, all joined forces in making the dream a reality. ♦

My Great Plains Conservation Program

By Frank Cimrhakl
Rancher, Roy, Mont.

In 1962 I signed a 5-year plan under the Great Plains Conservation Program to change from dryland farming to livestock production. The contract was later extended 2 years as other practices were added to the plan.

To produce hay and pasture, the plan called for planting various grasses instead of wheat and barley on the marginal cropland. The purpose was to improve and increase the ranch grazing capacity.

My 9,000-acre ranch, about 10 miles northeast of Roy, Mont., is in an area of extremes in weather. As a cooperative observer for the U. S. Weather Bureau for 30 years, I have measured and recorded weather on my ranch. The 30-year average annual precipitation is 13.40 inches. Some years, the scant precipitation does not produce a satisfactory grain crop but does better in producing grasses and hay.

Uncertain water supply

Reservoirs were the main supply of water for my livestock. Usually the water in these reservoirs is low in the fall of the year and frozen during the winter. Cattle had to be moved from water-shortage areas that had adequate stands of grass to areas of enough water but often with inadequate grass. Now, this is all changed.

I started by planting some of my cropland to grass. Each year I planted grass until now I have converted 450 acres to pasture and hay.

Seedbed preparation by summer fallowing helped in establishing good grass stands. Grasses such as Russian wildrye, western wheatgrass, and green needlegrass were planted for pasture, while alfalfa, crested wheatgrass and alfalfa, and intermediate wheatgrass and alfalfa were planted for hay. Excellent stands have been established. I still farm 200 acres and raise Horsford barley for hay or grain that I feed to cattle on the ranch.

Before the Great Plains contract, much of my rangeland was covered with a heavy stand of big sagebrush. To date, 1,020 acres of sagebrush has been sprayed by plane with 2-4,D. Deferment of this sprayed sagebrush range was practiced during the growing season from March 1 to November 1 for 2 years. With light grazing during the winter months, the grazing capacity of treated areas more than doubled. Some 400 acres of sagebrush range will be sprayed this year. No question about it, this conservation practice is worthwhile.

The highlight of my Great Plains conservation plan and contract was the drilling of two deep artesian wells 4 miles apart and constructing livestock water pipelines. One artesian well, 1,956 feet deep, flows at 80 gallons a minute and the other, 1,892 feet deep, produces 90 gallons a minute. Water pressure at each well is 80 pounds with a water temperature of 76°.

Wells and pipelines

I installed 5 miles of underground plastic pipelines, 1¼ and 1½ inches in diameter, that deliver water to 10 steel stockwater tanks 8 feet in diameter. These tanks provide water for livestock in 14 different pastures, and the running water never freezes in the wintertime. Some of the tanks, installed on fencelines with half of the tank on each side, serve two pastures.

I have noticed, as a result of this livestock watering system, that my cows come through the winter in much better flesh on less feed. Weaned calves gain more where a good supply of warm artesian well water is available then where they have to drink from holes chopped through ice on frozen reservoirs. Thanks to the Great Plains Program, no more ice chopping for me.

The combination of conservation practices in my Great Plains plan has inceased the grazing capacity of my ranch beyond the expected 70-head increase originally planned in 1962.

Permanent improvements

This year, the final year of my plan and contract, I will use up the balance of the federal cost-share allocated for my ranch. The conservation practices I have applied are of a permanent nature, and they will last much longer than the 7 contracted years.

All of this conservation work could not have been accomplished without the technical assistance furnished by the Soil Conservation Service assisting the Fergus County Soil and Water Conservation District, of which I am a cooperator.

The Great Plains Program led the way. It has done wonders. ♦

District subscribes to Soil Conservation

Directors of the Benzie Soil Conservation District, Beulah, Mich., report that since they are starting to receive *Soil Conservation* regularly on the official mailing list, the five paid subscriptions which they have kept up for many years now are being made available to five other people in their district.

Also for years the directors have provided subscriptions to the magazine for banks, some business places, schools, some cooperators, professional offices, hospital reading rooms, and county and town offices.

The magazine, the directors maintain, keeps them informed about the many facets of soil and water conservation activities. ♦

Buffalo respond like domestic stock to rotation-deferred grazing plan

By Charles C. McAvee
Range conservationist, SCS, Sheridan, Wyo.

When owners of the Durham Meat Co. Ranch of Gillette, Wyo., were convinced that buffalo could be managed as easily as livestock, they began a program of good range management that has given new life to native grasses and a healthy new look to their rangelands.

The ranch cooperated with the Intermountain Soil and Water Conservation District under a Great Plains Conservation Program contract.

Cross fences and stock-water developments to distribute livestock were the first step in starting a rotation-deferred grazing system. In pastures where big sagebrush was a problem the brush was sprayed to reduce competition for moisture with desired grasses.

The rotation-deferred grazing system was designed with five pastures, each of about equal carrying capacity. Pastures used during the growing season 1 year are deferred during that period the following year and grazed in fall or winter. No pasture is grazed more than half of the growing season, and livestock are moved to another pasture when about half the current year's growth of key forage plants is grazed.

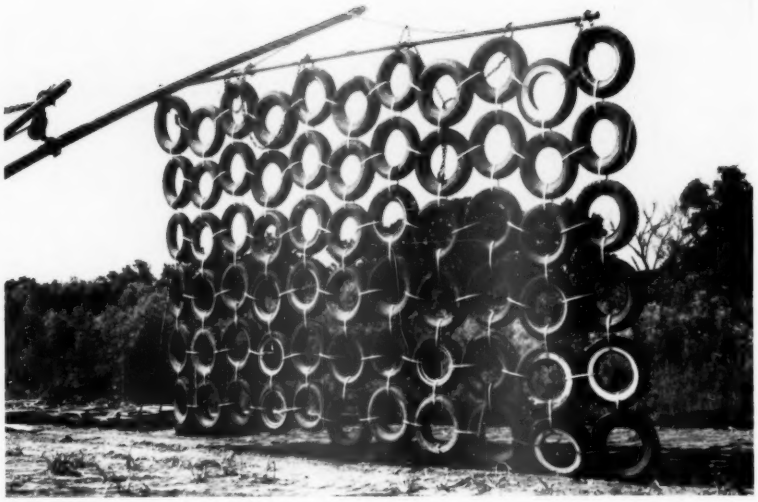
Grazing habits of buffalo seem to be similar to those of domestic livestock and they adapt to the grazing system. In past years, pastures were larger and distribution of the animals was uneven. With smaller pastures, correct stocking rate, and adequate stock water, buffalo as well as cattle spread out over the range and graze the grass more uniformly.

Within the past 3 years the Durham Meat Company has completed most of its Great Plains conservation plan. The rotation-deferred system has greatly improved the range. Western wheatgrass, green needlegrass, and other productive native plants are coming back. There is grass available for all seasons of the year and soil and water loss is at a minimum. ♦

In large pastures, buffalo concentrate and overgraze the range in spots (above). The smaller pastures and rotation-deferred grazing system on the Durham Meat Co. Ranch brought marked improvement of grass in 3 years.

Old tires retread worn streambanks

By Edward J. Anderson
Area land operations officer, U.S. Bureau of Indian Affairs, Anadarko, Okla.



A panel of tires, joined by galvanized steel bands, is ready to be lowered by an A-frame boom onto a streambank where anchors and support cable will hold it along the contour of the bank.

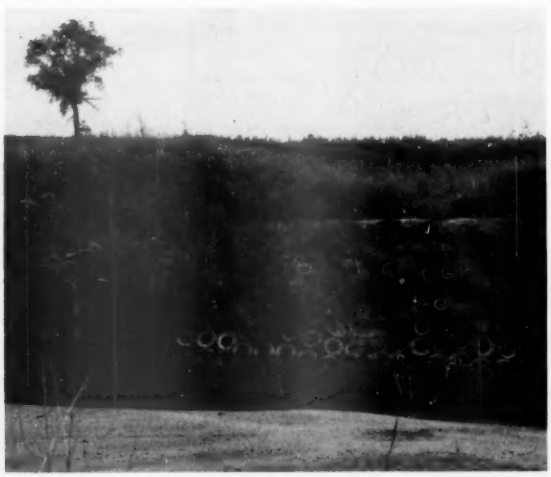
Used automobile tires, when secured as a protective mat against an eroding streambank, form a low-cost treatment for an expensive problem. The Bureau of Indian Affairs has used panels of tires in several locations near Anadarko, Okla.

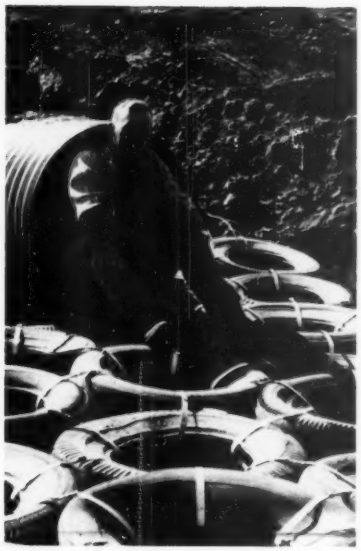
Not only do the tires protect the streambank from flowing water, but after they collect silt and become permanently embedded, the tires protect the roots of young trees planted to restore a vegetative cover.

Streambank erosion is a difficult conservation problem because erosion losses involve the more valuable bottom lands, and the riprap and other streambank-protection works are high cost practices usually reserved for off-the-farm use. A low cost treatment for farm use would have wide application in many areas.

Costs of projects using 1,200 to 1,500 tires each have been computed at a few cents per square foot of treatment area. Tires are available in quantities at little or no cost from tire centers and recapping services. General Services Administration has made large quantities of tires from military bases available to the

Panels that included 1,400 tires were joined in this pilot project to stop the Washita River from eroding a bottom-land field. Locust trees were planted later for cover, and 1 year later the bank was stabilized (right). Many of the tires are already embedded in the sediment they have trapped.





Another use for tire mats. They control erosion at this pipe outflow by catching the water and forming a stilling basin.

Bureau of Indian Affairs at no cost. Handling and transportation charges are nominal. Used oil field cable, in good condition, is available at a great savings also and labor requirements are flexible.

Tire mats can also protect stilling basins below outflow pipes of drop-inlet structures.

Another possible use is for water-gap fencing at creek crossings. A tire net suspended from a taut cable would present a barrier that would be flexible to rising flows. Tires would necessarily be slashed or split to avoid trapping water and silt. Trial use is planned in connection with a channel-improvement project now under construction. ♦

The tires are completely hidden by grass 2 years after they were installed.

Timber and space attract industry to RC&D area

Offering a choice of 13 attractive new industrial parks and a plentiful supply of hardwood timber, the Gwinnett County Resource Conservation and Development Project in Georgia was able to attract new jobs and create a market for a local resource by persuading a furniture manufacturing company to locate a plant within the area.

The Colonial Manufacturing Company was one of the first new industries to locate in the Lawrenceville Industrial Park. It employs about 125 people in making wood parts for dinette sets, deacon benches, chairs, and coffee tables. A dry kiln was installed to utilize the local hardwood timber.

Donald A. Reisman, president of Colonial, gave a number of reasons for the selection of the RC&D project area for the plant location.

"There's a plentiful supply of hardwood nearby and workers we can employ. But just as important, perhaps, is that this is such a desirable place for our people to live. There's plenty of land at a more reasonable price. We can have open space around our plant, and we don't feel boxed in on all sides."

Everything has gone so well since Colonial moved into Gwinnett County that already the company is thinking about plans for expansion.

"Now we ship the furniture parts to assembly plants in other locations," Reisman said. "We like this location so well that we plan to build our own assembly plant here."

Executives of industrial concerns moving into the project area have taken full advantage of available services to help them make the best use of their land. The assistance of conservationists of the Soil Conservation Service and the landscape architect of the Agricultural Extension Service are available in helping to control erosion and establish grass and shrubs on the plant grounds.

The Colonial Manufacturing Company is typical of the 29 new industries that have located in the industrial parks in the past 4 years. Collectively these industries represent an expenditure of about 31 million dollars and provide 2,900 new jobs.

New industry is only one facet of the total plan for the development of resources in the Gwinnett County RC&D Project. Other activities include land use planning for an orderly transition from a rural to an urban economy, development of recreation and wildlife areas, watershed protection and flood prevention projects, and woodland development.

All these activities, under the sponsorship of the Upper Ocmulgee River Soil and Water Conservation District and the Gwinnett County Commissioners, are creating a new and more prosperous and attractive community for the local citizens.—G. ROBERT PEEPLES, *area conservationist, SCS, Decatur, Ga.* ♦

Figures for Great Plains contracts

Some 32,352 contracts under the Great Plains Conservation Program had been signed as of December 31, 1968. The total cost-shared obligations amounted to $113,734,270. Planned cropland conversions totaled 1,859,009 acres or 21 percent of the total cropland under contracts.

The cumulative expenditures amounted to about $87 million, leaving a balance of $27 million unpaid cost-share obligations. ♦

Many agencies join to assure farmers a water supply

A combination of agency assistance and local initiative brought farmers of the Palmer Creek area in Yamhill County, Oreg., an assured supply of irrigation water.

The Palmer Creek Water District Improvement Company, organized for the purpose, financed and built a pumping station on the Willamette River to lift water to the upper reaches of Palmer Creek. The creek channel carries the water to pumping sites for 51 farms that irrigate 3,250 acres.

Frank Armentrout, a grain, grass seed, and berry grower in the Palmer Creek area, led the formation of a farmer committee that engaged an engineering firm to prepare plans and cost estimates for the system.

When the committee provided this information the Agricultural Stabilization and Conservation Service approved cost-sharing the construction under a special Agricultural Conservation Program project.

The Yamhill Soil and Water Conservation District board of supervisors approved the company's application for technical assistance from the Soil Conservation Service.

The Farmers Home Administration negotiated a loan for the pumps, pump house, engineering, legal costs, and many other items not eligible for ACP cost-sharing.

Because of the economic importance to its merchants and people, the city of Dayton near the mouth of Palmer Creek gave the project enthusiastic support. The county commissioners of Yamhill County also endorsed the special project.

Water rights were obtained on water stored in Corps of Engineers flood-control dams in the Willamette system.

The Water District Improvement Company contributed $10,000, and the individual farmers paid a total of $16,000 toward land acquisition and construction. The ASCS cost-share totaled $53,000. The Farmers Home Administration loaned the company $119,000.

The pumping station rises about 35 feet above the river. The station houses two vertical turbine pumps powered by 125-horsepower electric motors. Output of the pumps is 5,000 gallons per minute. There is space for equipment to provide an additional 10,000 gallons per minute when needed.

The annual operating and maintenance costs are estimated at $5 per acre for the acreage signed up.

Member farmers can now plant crops with the assurance that water will be available throughout the growing season. This will increase both the quality and quantity of the crop grown.—FRELL ZINK, *soil conservationist, SCS, McMinnville, Oreg.* ♦

Willamette River water flows into Palmer Creek Water Improvement District system. In the distance the ditch turns to continue its course to Palmer Creek.

Bird watchers top record in count

Again this year between 10,000 and 15,000 amateur and professional ornithologists took part in the annual Christmas bird count sponsored by the National Audubon Society.

A bird-counting team in San Diego, Calif., topped all previous records for number of species seen in 1 day with a total of 217 that exceeded its own previous record, last year's all-time high of 209 species.

Some 22 different areas reported seeing more than 150 different species during the 1-day count. This continual increase in the variety of birds sighted doesn't mean there are more birds or a greater variety of birds; it means that there are more and better bird watchers, according to society officials. ♦

From hogs, cattle, pastures to golf greens

A nine-hole golf course replaces dairy cattle and hogs on the E. P. Staff farm. The club house pictured was home of a hog herd.

From hog house to club house; from pastures to golf greens. These changes occurred on the farm of the E. P. Staffs, owners of the new Ramsey Lake Golf Course near Ramsey, Ill.

The golf course was a long-time ambition of the Staffs. It became a reality in 1966 when the Staffs and some friends started construction on the nine-hole course. It opened to the public early in 1967.

In developing their golf course plan, the Staffs requested assistance from the Fayette County Soil and Water Conservation District, as well as that of a friend, a golf course architect.

Many of the soil conservation practices already established on the Staff farmland were incorporated to make the course interesting and challenging to the golfer. These practices were useful in saving costs.

The farm pond became a beautiful hazard on three of the nine holes. The former pasture was converted to lush fairways with only one additional seeding and annual fertilization. Trees planted some years ago, by the local high school's Future Farmers of America class, also added to the challenges and beauty of the course. A spring, developed for livestock water, now irrigates the greens and tees.

Paint, plumbing, paneling, air conditioning, hard work, and imagination turned the old hog house into a modern pro-shop. Timber was thinned to make room for the back three holes of the course.

"Golf courses can be expensive," states Staff, "but we were able to get by with short cuts that saved thousands of dollars."

Staff gives much credit to his neighbors who used their farm equipment to help construct the greens and tees. Proper soil for greens is generally limited and costly for most golf course builders. Staff's keen knowledge of soils helped him locate the proper mixture of sand, silt, and clays in an adjoining bottom-land field, right on his own farm. The big job was to transport the necessary sandy loam soil to build the greens. Neighbors did this in a few short days with the earthmoving scoops many of them owned for constructing their conservation practices.

Staff says management and maintenance take nearly four full-time employees. At present this is no problem. Four of Staff's eight children live at home and share the work. Staff compares the time requirements of the golf enterprise with that of dairy farming. "You must be there 14 hours a day, 7 days a week to make the thing go," he said.

Before venturing into this project, the Staffs studied the opportunities and hazards. They discussed plans with authorities on the subject.

The Farmers Home Administration assisted with a long-term loan, and Soil Conservation Service assisted in planning the recreational enterprise, designing of a new pond, and in rebuilding the existing pond to be used for a hazard.

The new pond brought ideas to the Staffs. Their recreation area lies close to Ramsey Lake State Park. Thousands of campers visit this park annually, many with children anxious for a place to swim. The Staffs' next project may be a public swimming area.

Providing outdoor recreation to the public is a new and challenging opportunity for the American farmer. Opportunities are many, but as Pete Staff points out, "Careful planning and study should precede the change from raising food for the public to providing outdoor recreation."—WILLIAM F. SCHALLER, *district conservationist, SCS, Vandalia, Ill.* ♦

Citrus grower cheers cover after rains

A heavy rain washed down between the new citrus trees of Hobe Groves Associates orchard near Stuart, Fla., causing heavy erosion damage in some areas but insignificant damage in others. It was apparent to Manager Thomas Gartland, a cooperator with the Martin Soil and Water Conservation District, that cover crops made the difference. He quickly decided to use cover crops.

Vegetative protection is essential for the expensive system of ditches, dikes, and beds needed for drainage and water control on citrus orchards. Twenty inches of rain in 1 month proved the drainage system could handle the water problem, but erosion between the rows caused damage to the water-disposal system and required costly repairs. No significant damage occurred where cover crops were established.

Millet, rye, oats, and bahiagrass are common crops on general farms in north Florida, and citrus growers are finding they can also be used as cover crops in south Florida orchards. Gartland uses browntop millet for a summer cover crop and oats for a winter cover. The cover crop is planted between the tree rows and in the water furrows.

For permanent cover, bahiagrass is seeded with the cover crop. Minimum tillage is used after the grass is established. This involves cultivating or using herbicides only in the area next to the trees.

The cost for the temporary and permanent cover is less than $20 an acre, but Gartland feels it is worth it.

Gartland summed up his vegetative program by saying, "We just don't plant anything without a cover crop."—ROBERT M. CRAIG AND O. L. CASON, JR., *agronomist and district conservationist, SCS, Gainesville and Stuart, Fla.* ♦

Erosion is evident where soil is bare in a new citrus orchard (above). Protected areas were planted to millet for summer cover and bahiagrass as permanent cover. Grass used with minimum tillage (below) reduces soil erosion and damage to young trees from sand blasting. At bottom, Tom Gartland (left), manager of Hobe Grove Associates, Ltd., and O. L. Cason, SCS district conservationist, discuss oats cover crop seeded with Pensacola bahiagrass for permanent cover.

Meetings . . .

Watershed Congress seeks community action

"Watersheds — Framework for Community Action" is the theme of the 16th National Watershed Congress, to be held June 8-11 in Louisville, Ky.

The congress is sponsored by 27 leading national industrial, agricultural, civic, and conservation organizations. Its purpose is to serve as an annual forum for the discussion of ways to encourage, expedite, and broaden local watershed programs.

There will be panel discussions on identifying community needs and on governmental and private action in watershed programs.

Other features include a tour of the Valley Creek watershed in the famous Kentucky bluegrass country and Bernheim Forest, which includes a wildlife sanctuary, landscape arboretum, and nature center. A showing of outstanding new water films and an evening cruise on the Belle of Louisville, a paddle-wheel steamer, are also planned.

Worldwide conference to be held on arid lands

An international conference on "Arid Lands in a Changing World" will be held at the University of Arizona, Tucson, June 3-13. Sponsors are the Committee on Arid Lands of the American Association for the Advancement of Science, American Society of Range Management, United Nations Educational and Scientific Organization, International Geographical Union, Arid Zone Commission, and Arizona and New Mexico Academies of Science.

The objective of the conference is to stimulate interest in, and knowledge of, arid lands throughout the world through the exchange of knowledge among countries and between persons from different professional fields.

Field trips, of both short and longer duration, will provide opportunity for firsthand observations of arid lands in North America.

Federal-State water officials to meet

The third annual conference of Federal and State Water Officials will take place in Salt Lake City, Utah, on June 23-25.

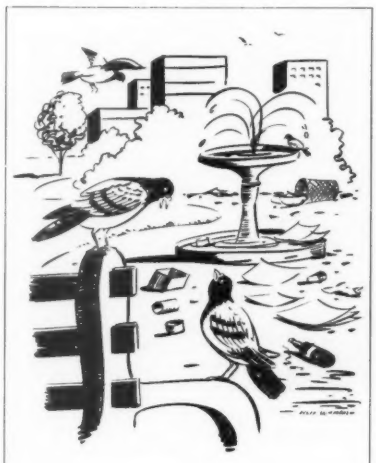
Attending will be state water officials who comprise the Interstate Conference on Water Problems and federal officials from those departments and agencies participating in the activities of the Water Resources Council.

The conference will be a working meeting to consider various technical and program matters in the water and related land-resource field of mutual concern to state and federal agencies.

Seedsmen's groups combine in annual convention

More than 600 seedsmen and representatives from Land-Grant universities, the Department of Agriculture, and allied industry are expected to attend the 86th annual convention of the American Seed Trade Association, June 15-18, in Denver, Colo.

In addition to many general sessions and commodity group division meetings, several meetings of allied organizations are scheduled, including the annual meeting of the American Seed Research Foundation, National Council of Commercial Plant Breeders, and the All-American Selections Council. ASTA's Conservation Committee will meet on Saturday, June 14.



"-- and man says pigeons 'foul' up parks!"
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Dates and places

June 2-6, General Federation of Women's Clubs, Cleveland, Ohio
3-13, International Conference on Arid Lands, Tucson, Ariz.
8-11, 16th National Watershed Congress, Louisville, Ky.
15-18, Outdoor Writers Association of America, Inc., Duluth, Minn.
15-18, American Seed Trade Association, Denver, Colo.
22-26, American Institute of Architects, Chicago, Ill.
22-26, Air Pollution Control Association, New York, N.Y.
22-27, National Association of Sanitarians, Houston, Tex.
23-25, 3d National Conference of Federal and State Water Officials, Salt Lake City, Utah
23-27, Water Resources Council, Salt Lake City, Utah
26-29, Association of Consulting Foresters, West Dover, Wyo.
27-29, Western Association of State Fish and Game Commissioners, Teton, Wyo.
29-July 4, National Education Association, Philadelphia, Pa.
July
8-9, American Country Life Association, Stillwater, Okla.
8-10, Izaak Walton League of America, Cincinnati, Ohio
20-24, Business and Professional Women's Club, St. Louis, Mo.
26-30, American Association of Nurserymen, Inc., New York, N.Y.
27-30, National Association of County Government Officials, Portland, Oreg.
31-Aug. 1, Great Plains Agricultural Council, Oklahoma City, Okla.

Forest fires decline

The number of forest fires started as a result of man's carelessness during 1968 dropped for the second year in a row, despite materially increased use of the national forests, according to the U.S. Forest Service. Man-caused fires numbered 4,900—some 200 under the 5-year average (1963 through 1967).

Total number of fires from all causes—lightning-caused as well as man-caused—was also notably below normal in 1968. ♦

Review

An Environment Fit for People. BY RAYMOND F. DASMANN. *1968. Public Affairs Committee, New York. Public Affairs Pamphlet 421. 28 pp. $0.25.*

This little pamphlet states clearly and concisely the problem of environmental deterioration and the need for conservation in its broadest terms.

The concepts expressed are in such complete accord with the precepts and goals of the Soil Conservation Service that the agency has purchased and distributed a copy to every headquarters and field office in the country.

The author is a distinguished biologist and ecologist, presently director of environmental studies for The Conservation Foundation. The pamphlet summarizes the ideas discussed more fully in his book *Environmental Conservation,* first published in 1959 and revised in 1968.

This is an explanation of human environment and conservation in terms of ecosystem ecology. Within this framework, soil erosion, sedimentation, water supply, and water quality—primary concerns of the Soil Conservation Service—are seen as parts of a larger whole.

Conservation is redefined as "the rational use of the environment to achieve the highest quality of living for mankind."

Principal topics discussed are population and environment, air pollution, water pollution, solid wastes, urban open spaces, city planning, soil erosion, conservation of rangelands, forest conservation, wild creatures and wild places, and the marine environment.

This excellent statement in layman's language should further popular understanding of the interrelatedness of conservation problems that SCS has long been seeking.—B.O.

AMERICA THE BEAUTIFUL COLOR LITHOGRAPHS

America The Beautiful—Vermont USDA SOIL CONSERVATION SERVICE

DAIRY COWS ON IMPROVED PASTURE, CALEDONIA COUNTY SOIL AND WATER CONSERVATION DISTRICT

Full-color lithograph prints suitable for framing—one for each state, Puerto Rico, and Virgin Islands—are available from the Superintendent of Documents for $0.10 each or $5 for set of 52. Obtain order blanks from your local SCS or post office.

New Publications

It's Your World. *1969. U. S. Department of the Interior. 100 pp., illus. $2.* Fifth in the series of Conservation Yearbooks published by the U. S. Department of the Interior, this one focuses on the growing problems of the American environment, reporting agency by agency its efforts to do something about the problems.

One caption proclaims that "this is the grassroots conservation story," that "grassroots are Nature's numerous servants . . . Grassroots are among conservation's most basic natural tools." Another caption with a photograph of a beautiful stretch of stream asserts, "Conservation is one of the biggest jobs facing people today . . . As people act together to improve their habitat, they strengthen the quality of their entire natural world."

The marine resource, wildlife and the endangered species, the land under supervision of the Bureau of Land Management, the recreation activities of the Park Service and the Bureau of Reclamation, the more recent operations of the Bureau of Outdoor Recreation — these and other programs of Interior dealing with our natural surroundings are given sympathetic treatment.

A final offering is a "recipe" for a clean, appealing environment, a checklist of goals (things to work for) and action (ways to do them).

Directory of Federal Recreation Entrance, Admission, and User Fee Areas. *1969. U. S. Dept. Int., Bureau of Outdoor Recreation. (28 pp.)* List of areas to which "Operation Golden Eagle" applies in its final year. After March 1970, the Bureau of Outdoor Recreation's Golden Eagle Passport will be discontinued and each agency will fix and collect its own fees.

Professional Workers in State Agricultural Experiment Stations and Other Cooperating State Institutions. *Rev. 1969. USDA, Cooperative State Research Service. 280 pp. $1.50.*

What You Can Do About Water Pollution. *Rev. 1968. U. S. Dept. Interior CWA–8. (6-page) illus., colored folder. $0.15.*

Public Assistance for Forest Landowners. *1968. USDA PA–893 (16-page) folder, illus.* Supersedes PA–409, *Public Forestry Assistance for Small Woodlands.*

Protecting the Forests From Fire. BY U. S. FOREST SERVICE. *Rev. 1969. USDA Agr. Inf. Bull. 130. 31 pp., illus.* The problem; control methods and equipment.

From the Administrator:

Conservation in the Great Plains

The Great Plains has long been recognized by those who study it, work in it, and live in it, as an area separate and apart.

Its problems are those of a semiarid land, bounded on the West by the mountains which reduce its moisture allowance and on the East by an indefinite wavering north-south line where moisture begins to get a little better.

In retrospect it is evident that our principal lack was in understanding, a failing which we are well on our way to correcting.

In the 1941 Yearbook of Agriculture, an author noted: "In a desert you know what to expect of the climate and plan accordingly. The same is true of the humid regions. Men have been fooled by the semiarid regions because they are sometimes humid, sometimes desert, and sometimes a cross between the two."

This truth we now have realized.

Our answer to the problems of the Great Plains is to accept the common denominator, to base our use of the vast resources of the area as if the months ahead will be marked by drought or any of the other emergencies that people who live in the Plains have to come to expect and no longer fear.

Most of what we have learned in developing a sound agriculture in the Great Plains came to us through the year-after-year experience of the landowners who seemed to fare better than most through years of stress. Some of our learning, including our knowledge of the soils of the area, came to us through the efforts of the scientist and the research technician.

The sum of this technical and scientific know-how is a resource conservation pattern that insures a sound economy, with underneath a cushion against the coming of drought, wind, blizzard, insect devastation, or other emergency.

Given the forceful leadership of our soil and water conservation district boards, technical guidance promptly available from the Soil Conservation Service, and cost-sharing from federal funds to ease the burden of immediate investment in conservation—this adds up to the Great Plains Conservation Program, now in its 11th year of active existence.

The 11 years of experience with the Great Plains Conservation Program has proved its value in the course of emergencies of short duration. There remains, of course, to see how the landowners who have invested in its offering come through the next severe drought such as has visited the Great Plains in cycles of roughly 20 years.

Those of us who have been involved in this program have no fear but that its effectiveness will be even more soundly proved.

It occurs to me, weighing the progress that has been made by the 12 to 15 thousand landowners who have successfully carried out their Great Plains Conservation Program plans, that we have established principles that other semiarid areas of the world may find worthwhile.

One-seventh of the earth's land resource is semiarid, the geographers tell us. Some of it is in Southeastern Europe, some in Asia, in Australia, in South America. Although not all of these lands suffered the damage that our Plains received from aggressive development in settlement times, most of them surely would benefit from our Great Plains experience. This will be especially so as these other lands feel the inevitable new pressures for increased production.

At any rate, those of our Soil Conservation Service field forces and others who have had a hand in the Great Plains Conservation Program can feel deep and justifiable satisfaction in a job well done.

Kenneth E. Grant

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A prize-winning picture story of range improvement

These three photographs tell the story of range improvement on the ranch of Gordon Sieh, Leola, S. Dak., as a result of his conservation plan under a Great Plains contract. They won the photo-story contest for Tom Pozarnsky, SCS range conservationist, Mobridge, S. Dak., at the 1969 annual meeting of the American Society of Range Management at Calgary, Canada.

1963. Overgrazed rangeland is heavily infested with weeds. In the photo are Dwayne Breyer, SCS, and ranchers Tom Boylan and Don Jarrett.

1966. As a result of controlled grazing and deferment, grass is replacing the weeds. Al Taylor, SCS, and ranch owner Gordon Sieh.

1968. The range is now predominantly grass. Tommy Nora, SCS, Gordon Sieh, and Merle Sherbourn, SCS. ♦

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